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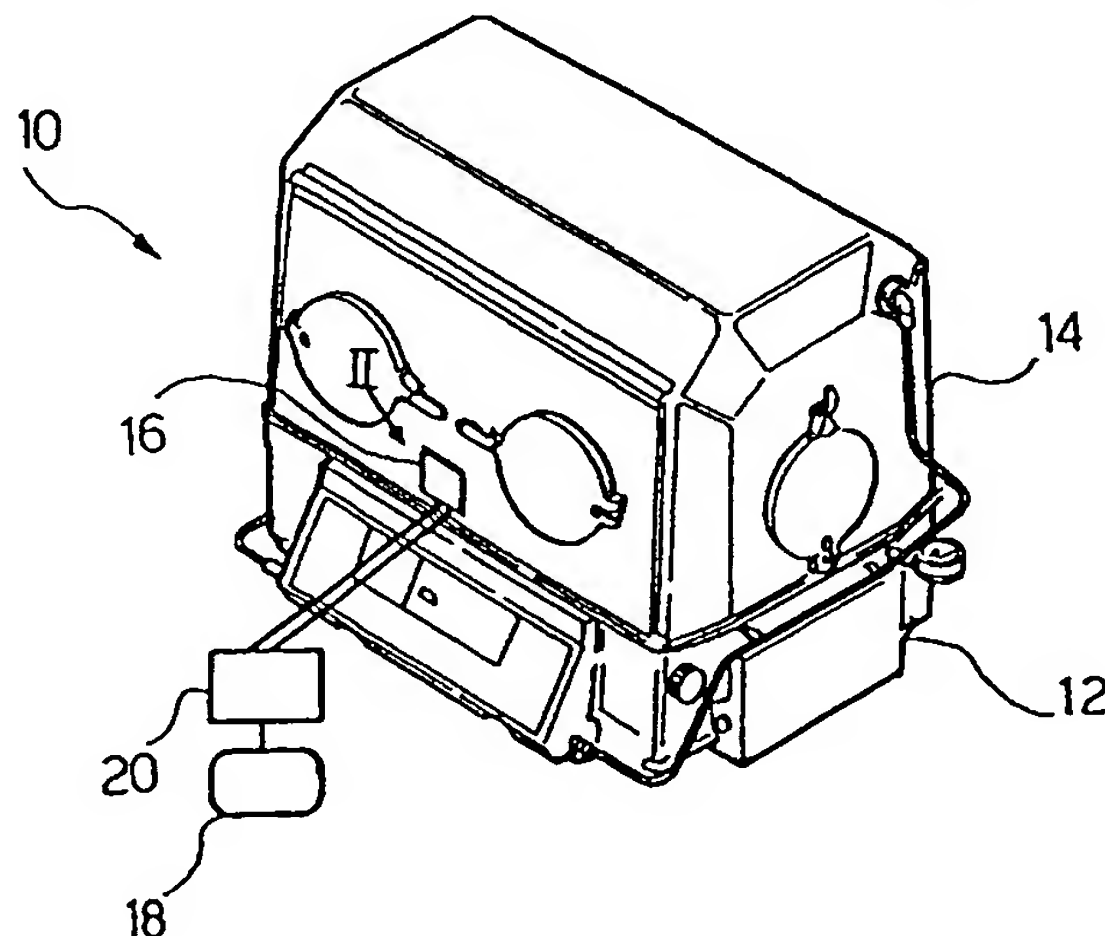
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(54) **Apparatus for controlling the climate in an environment intended to accomodate a new-born child**

(57) The apparatus comprises a base structure and a wall, in the form of a shell for example, which in combination with the base structure delimits a space in which, in operation, controlled environmental conditions

are maintained. The apparatus comprises at least one electrically controlled actuator (16) capable of producing mechanical vibrations of the wall (14) to generate acoustic waves in the aforesaid space.

**FIG. 1**



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of sound insulation is the fan used to circulate the air within the incubator. This is a source of noise with distinct tonal characteristics, since the noise emission frequency is related to the rotation speed of the motor and to the number of blades of the fan. Conventional sound insulation systems are difficult to apply in the specific case of the fan and have little practical effect.

[0022] The sound reproduction device according to the present invention can also be used for the purpose of improving the sound insulation of the incubator by using the known principle of active cancellation of the signal, which consists essentially in the generation of an acoustic signal in phase opposition to the noise component which is to be attenuated.

that it comprises an electronic control unit programmed to provide active sound insulation of the said isolated space by generating acoustic signals in phase opposition to the noises which are to be attenuated.

### Claims

1. Apparatus for climatic control in an environment designed to house a newborn child, comprising at least one wall (14) which, associated with a base structure (12), delimits a space in which, in operation, controlled environmental conditions are maintained, characterized in that it comprises at least one electrically controlled actuator (16) applied to the aforesaid wall (14), the said actuator (16) being capable of producing mechanical vibrations of the wall (14) to generate acoustic waves in the aforesaid space.
2. Apparatus according to Claim 1, characterized in that the aforesaid actuator (16) is rigidly connected to the aforesaid wall (14).
3. Apparatus according to Claim 2, characterized in that the aforesaid wall (14) comprises at least one portion of plastic material in which the said actuator (16) is incorporated.
4. Apparatus according to Claim 1, characterized in that the aforesaid actuator (16) comprises a piezoelectric element (22) capable of producing mechanical vibrations of the wall (14) correlated with an electrical exciting signal.
5. Apparatus according to Claim 1, characterized in that it comprises an electronic drive device (20) capable of receiving an electrical input signal and of producing an electrical signal for driving the said actuator (16), the said drive device (20) being designed to vary the drive signal with respect to the input signal in such a way as to compensate for the alterations which an ordinary input signal undergoes as a result of the transfer function of the sound reproduction system comprising the actuator (16), the shell (14) and the isolated space.
6. Apparatus according to Claim 1, characterized in